

§ 77.803-2 Ground check systems not employing pilot check wires; approval by the Secretary.

Ground check systems not employing pilot check wires shall be approved by the Secretary only if it is determined that the system includes a fail safe design which will cause the circuit interrupter to open when ground continuity is broken.

§ 77.804 High-voltage trailing cables; minimum design requirements.

(a) High-voltage trailing cables used in resistance grounded systems shall be equipped with metallic shields around each power conductor with one or more ground conductors having a total cross-sectional area of not less than one-half the power conductor, and with an insulated conductor for the ground continuity check circuit. External ground check conductors may be used if they are not smaller than No. 8 (AWG) and have an insulation rated at least 600 volts.

(b) All such high-voltage trailing cables shall be adequate for the intended current and voltage. Splices made in such cables shall provide continuity of all components.

§ 77.805 Cable couplers and connection boxes; minimum design requirements.

(a)(1) Couplers that are used in medium- or high-voltage power circuits shall be of the three-phase type and enclosed in a full metallic shell, except that the Secretary may permit, under such guidelines as he may prescribe, no less effective couplers constructed of materials other than metal.

(2) Cable couplers shall be adequate for the intended current and voltage.

(3) Cable couplers with any metal exposed shall be grounded to the ground conductor in the cable.

(4) Couplers shall be constructed to cause the ground check continuity conductor to break first and the ground conductor last when being uncoupled when pilot check circuits are used.

(b) Cable connection boxes shall be of substantial construction and designed to guard all energized parts from personal contact.

§ 77.806 Connection of single-phase loads.

Single-phase loads, such as transformer primaries, shall be connected phase to phase in resistance grounded systems.

§ 77.807 Installation of high-voltage transmission cables.

High-voltage transmission cables shall be installed or placed so as to afford protection against damage. They shall be placed to prevent contact with low-voltage or communication circuits.

§ 77.807-1 High-voltage powerlines; clearances above ground.

High-voltage powerlines located above driveways, haulageways, and railroad tracks shall be installed to provide the minimum vertical clearance specified in National Electrical Safety Code: *Provided, however,* That in no event shall any high-voltage powerline be installed less than 15 feet above ground.

§ 77.807-2 Booms and masts; minimum distance from high-voltage lines.

The booms and masts of equipment operated on the surface of any coal mine shall not be operated within 10 feet of an energized overhead powerline. Where the voltage of overhead powerlines is 69,000 volts, or more, the minimum distance from the boom or mast shall be as follows:

Nominal power line voltage (in 1,000 volts)	Minimum distance (feet)
69 to 114	12
115 to 229	15
230 to 344	20
345 to 499	25
500 or more	35

§ 77.807-3 Movement of equipment; minimum distance from high-voltage lines.

When any part of any equipment operated on the surface of any coal mine is required to pass under or by any energized high-voltage powerline and the clearance between such equipment and powerline is less than that specified in § 77.807-2 for booms and masts, such powerlines shall be deenergized or other precautions shall be taken.